

10/526010
DT011000 PCT/PT 25 FEB 2005

Docket No.: 1254-0269PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Masaki SHIMIZU

Application No.: Not Yet Assigned

Confirmation No.: N/A

Filed: February 25, 2005

Art Unit: N/A

For: LIGHTING APPARATUS AND LCD BACKLIGHT
APPARATUS

Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

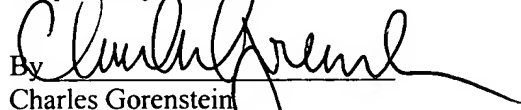
Sir:

The PTO is requested to use the amended sheets/claims attached hereto (which correspond to Article 19 amendments or to claims attached to the International Preliminary Examination Report (Article 34)) during prosecution of the above-identified national phase PCT application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §1.16 or 1.14; particularly, extension of time fees.

Dated: February 25, 2005

Respectfully submitted,

By 

Charles Gorenstein

Registration No.: 29,271

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Rd

Suite 100 East

P.O. Box 747

Falls Church, Virginia 22040-0747

(703) 205-8000

Attorney for Applicant

CG/smt

Attachment(s)

What is claimed is:

1. A lighting apparatus comprising:

an optical member;

a casing in which the optical member and a lamp are disposed;

5 a first member provided in the optical member; and

a second member provided in the casing for attaching the optical member to the casing by cooperating with the first member, wherein

the first and second members are disposed such that both when the lighting apparatus is in a basic position and in a first stop position reached when the lighting apparatus is rotated from the basic position in the display plane, no upward stress is applied to the bottom of the optical member in the plane of the display screen due to its own weight.

10 2. The lighting apparatus according to claim 1, wherein the optical member is supported by the casing at the top of the plane of the display screen.

3. A lighting apparatus comprising:

an optical member;

a casing in which the optical member and a lamp are disposed;

20 a first member provided in the optical member; and

a second member provided in the casing for attaching the optical member to the casing by cooperating with the first member, wherein

the first and second members are disposed such that both when the lighting apparatus is in a basic position and in a first stop position reached when the lighting apparatus is rotated from the basic position in the plane of the display screen, the optical member is supported vertically at the top in the plane of the display screen, and no upward stress is applied to the optical member at the bottom due to its own weight.

4. The lighting apparatus according to claim 3, wherein the first member is an opening or a cutaway formed in the optical member, and the second member is a locking projection being provided to be locked in the opening or cutaway when the optical member is attached to the casing.

5

5. An LCD backlight apparatus comprising:

an optical member in which at least one opening or cutaway is formed, wherein the optical member is supported by said casing by locking projections being inserted into the opening and locked therein, or being abutted on one end of said cutaway, wherein

10

the opening and the locking projection are freely fitted with each other, or the edge and the locking projection are positioned with respect to one another such that both in a basic position and in a first stop position of the apparatus that is reached when the apparatus is rotated from the basic position, the opening or the edge of the cutaway and the locking projection at least at the bottom of the non-effective screen range of the LCD apparatus do not come into contact with one another.

15

6. The LCD backlight apparatus according to claim 5, wherein, in the state where the opening or the edge of the cutaway at the bottom of the non-effective screen range of the LCD apparatus does not come into contact with the locking projection, a degree of spatial freedom is given between the opening or the edge of the cutaway and the locking projection that are not locked with one another.

20

7. An LCD backlight apparatus comprising:

25

an optical member in which at least one opening or cutaway is formed; and

a casing in which the optical member and a lamp are disposed, wherein the casing includes a locking projection that abuts on the opening or cutaway in

the optical member to thus support the same, and another locking projection that does not abut on the opening or cutaway of the optical member, wherein

the opening of the optical member is freely fitted with the locking projection that does not abut on the opening or the edge of cutaway such that at least the opening or the edge of the cutaway and the locking projection at the bottom of the non-effective screen region of the LCD apparatus do not come into contact with one another in either a basic position of the apparatus or a first stop position that is reached by rotating the apparatus from the basic position in the plane of the display screen, the apparatus further comprising a member for holding the optical member between the side on which an LCD panel is disposed and the side on which the lamp is disposed.

8. An LCD backlight apparatus comprising:

an optical member in which at least one opening or cutaway is formed;
and

a casing in which the optical member and a lamp are disposed, wherein the casing includes a locking projection that abuts on the opening or cutaway in the optical member to thus support the same, and another locking projection that does not abut on the opening or cutaway of the optical member, wherein

the opening of the optical member is freely fitted with the locking projection that does not abut on the opening or the edge of the cutaway such that at least the opening or the edge of cutaway and the locking projection at the bottom of a non-effective screen region of the LCD apparatus do not come into contact with one another in either a basic position of the apparatus or a first stop position that is reached by rotating the apparatus from the basic position in the plane of the display screen, the apparatus further comprising a member for holding the optical member from the side on which an LCD panel is disposed.

9. The LCD backlight apparatus according to any one of claims 4 to 8, wherein

the locking projection adapted to be locked in the opening or the cutaway comes into contact with the opening or cutaway in a longitudinal direction in either the basic position or in the first stop position.

5 10. The apparatus according to any one of claims 1 to 9, wherein the surface of the optical member is provided with an antistatic function.

11. The apparatus according to any one of claims 1 to 10, wherein the optical member is provided with a beveled finish on an edge and/or side thereof.

10

12. A rotatable LCD apparatus comprising:

an LCD apparatus; and

a rotating mechanism for rotating the LCD apparatus, wherein

the LCD apparatus includes an LCD backlight apparatus and an LCD

15 panel, the LCD backlight apparatus comprising:

an optical member in which a plurality of openings or cutaways are formed above and below the center of gravity of the optical member; and

a casing in which the optical member and a lamp are disposed, the casing including a locking projection that abuts on the openings or cutaways to thereby
20 support the optical member, and a locking projection that does not abut on the openings or cutaways, wherein the openings or the edges of the cutaways do not come into contact with the locking projections below the center of gravity in either a basic position or in a first stop position of the LCD apparatus, the first stop position being reached as the LCD apparatus is rotated from the basic
25 position about an axis perpendicular to the screen, wherein the LCD panel is disposed on the opposite side of the optical member from the lamp.

13. A lighting apparatus comprising:

an optical member; and

a casing in which the optical member and a lamp are disposed, wherein the optical member can be locked above the center of gravity in a vertical direction depending on its rotation, and wherein the optical member is adapted not to receive upward stress below the center of gravity.

5

14. A lighting apparatus comprising:

an optical member;

a casing having an opening in which the optical member is disposed and accommodating a lamp;

10

a first member provided in the optical member; and

a second member provided in the casing member for attaching the optical member to the casing by cooperating with the first member, wherein

15

the first and second members are disposed at positions such that in either a basic position or a first stop position of the lighting apparatus, the first stop position being reached by rotation of the apparatus from the basic position in the plane of the display screen, the optical member does not receive upward stress at the bottom in a vertical direction in the plane of the display screen due to its own weight.